Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KI-HONG KIM

Appeal No. 97-3964
Application No. 08/319,658

HEARD: February 2, 2000

Before THOMAS, HAIRSTON, and JERRY SMITH, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 9. In an amendment (paper number 16) that responded to a new ground of rejection (Answer, pages 7 through 10), claims 1 and 3 through 6 were amended.

The disclosed invention relates to a mode discriminating method and apparatus for discriminating the operating mode of

a mechanism that has a forwardly and reversely rotatable motor that generates power to switch operating modes.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A mode discriminating method for discriminating the operating mode of a mechanism having a forwardly and reversely rotatable motor for generating power to switch operating modes, said method comprising the steps of:

detecting at least one switching signal according to a switched mode of said mechanism;

detecting a motor rotation signal indicative of the rotating direction of said motor; and

combining said switching signal and motor rotation signal in a control circuit to determine the switched mode of said mechanism.

The references relied on by the examiner are:

Teranishi et al. (Teranishi)	4,549,233	Oct. 22, 1985
Kitami	4,723,236	Feb. 2, 1988
Gotoh	5,062,013	Oct. 29, 1991
Fukuyama et al. (Fukuyama)	5,172,283	Dec. 15, 1992

Claims 1 through 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over appellant’s admitted prior art in view of Fukuyama and Teranishi.

Claims 1 through 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over appellant's admitted prior art in view of Fukuyama and either Gotoh and Kitami.

Reference is made to the briefs and the answer for the respective positions of the appellant and the examiner.

OPINION

The obviousness rejection of claims 1, 3 and 5 is sustained, and the obviousness rejection of claims 2, 4 and 6 through 9 is reversed.

Appellant has provided a detailed analysis of Teranishi (Brief, pages 9 through 13). Excerpts of such analysis of Teranishi are as follows:

> Teranishi relates to a device for controlling the location of various components in a VTR. As shown in Fig. 2, the device comprises a mode selecting circuit 41 to 45, a read only memory (ROM) 46, a motor control circuit 47, a comparator 48, position detecting switches 49a and 49b, and a loading latch 50 . . . .
>
> The ROM 46 inputs the specified mode signal D_1 . . . and outputs a motor control signal D_3, a comparison signal D_4, and a particular mode signal D_5 . . . . The motor control signal D_3 is input by the motor control circuit 47, and such circuit 47 rotates the motors M_1 and M_2 . . . . As shown in Fig. 4, if the motor control signal D_3 equals 8 (1000), the control circuit 47 rotates the motor M_1 in a forward direction. Similarly, . . . the

control circuit 47 respectively rotates the motor M_1 in a reverse direction . . . .

The motors M_1 and M_2 respectively move the first mode changing mechanism (Fig. 1A) and the second mode changing mechanism (Fig. 1B) to predetermined positions so that the VTR is capable of operating in the selected mode. Furthermore, the position detecting switches 49a and 49b are also connected to the motors M_1 and M_2 and output a position detection signal D_s which corresponds to the positions of the mode changing mechanisms. As illustrated in Fig. 6, when the first and second mode changing mechanisms are properly positioned for the PB [playback] mode, the position detection signal D_s equals 8 (1000) . . . .

The comparison signals D_4 corresponds to the position to which the motors M_1 and M_2 are instructed to move the first and second mode changing mechanisms. Furthermore, the signal D_4 represents such positions with values that are the same as the various values of the position detection signal D_s.

The comparator 48 inputs the position detection signal D_s and the comparison signal D_4 and outputs a match signal when the signals D_s and D_4 are equal. In other words, the match signal is output when the motors M_1 and M_2 have moved the first and second mechanisms to their proper positions . . . .

In order to more clearly understand the operation of the Teranishi device, an example of how the device changes from the STOP mode to the PB mode will be described below. First, the selection switch 41a is depressed, and the specified mode signal D_1 [is] output by the mode selecting circuit 41 to 45 . . . . Furthermore, . . . the first and second mode changing mechanisms are currently positioned for the STOP mode, . . .

> As a result, the ROM 46 inputs the signals D_1 and D_2 and outputs the appropriate motor control signal D_3, comparison signal D_4, and particular mode signal D_5 . . . . Consequently, the motor control circuit 47 inputs the signal D_3 . . . and rotates the motor M_1 in a forward direction (Fig. 4).
>
> The instant before the motor M_1 begins rotating, the position detection signal D_s output from the switches 49a and 49b . . . indicates that the mode changing mechanisms are located in a position corresponding to the STOP mode. As a result, the comparator 48 compares the signal D_4 . . . with the signal D_s . . . and outputs a match signal which equals 0. However, when the motor M_1 moves the first mode changing mechanism to the position corresponding to the PB mode, the value of the position detection signal D_s output by the switches 49a and 49b equals 8 (1000). Therefore, the comparator determines that the signal D_s equals the comparison signal D_4 and outputs a match signal which equals 1.
>
> As a result, the latch 50 inputs the match signal . . . . As a result, the motor control circuit 47 instructs the motor M_1 to stop rotating, and the mode changing mechanisms remain in a position which corresponds to the PB mode.

Based upon the foregoing, we see that Teranishi is concerned with discriminating the operating mode of a mechanism having a forwardly and reversely rotatable motor M_1 for generating power to switch operating modes. The mode signal D_1, and the control signal D_3 are detected according to a switched mode of the mode setting mechanism 41. The signal

D_4 corresponds to switching signal D_3 (column 4, lines 50 through 56). In a schematic illustration of the position detecting switches 49a and 49b (Figure 5), "[a]n electrically conductive wiper W rotates with the motor M_1" (column 5, lines 22 and 23) (emphasis added). According to Teranishi, "[w]hen the motor M_1 reaches an angular position that places the first mode changing means (FIG. 1A) in the PB mode, the wiper W establishes electrical contact between a contact A and a ground contact G" (column 5, lines 28 through 31). "As FIG. 6 shows, . . . D_s indicates the mode changing mechanism is in a position corresponding to the PB mode of the tape recorder" (column 5, lines 33 through 36). Thus, Teranishi is "detecting a motor rotation signal [of M_1] indicative of the rotating direction of said motor" as claimed with the position detectors 49a and 49b. The switching signal D_4 and the motor rotation signal D_s are combined in comparator 48, and, if they match, then the control circuit of Figure 2 knows the switched mode of the mechanism (column 5, lines 45 through 51).

In summary, all of the limitations of claim 1 are found in Teranishi. Although the rejection is based on the admitted prior art, Fukuyama and Teranishi, it is permissible to

sustain the obviousness rejection in light of Teranishi alone. In re Bush, 296 F.2d 491, 495, 131 USPQ 263, 266-267 (CCPA 1961). After all, "a lack of novelty in the claimed subjet matter, e.g., as evidenced by a complete disclosure of the invention in the prior art, is the 'ultimate or epitome of obviousness.'" In re Pearson, 494 F.2d 1399, 1402, 181 USPQ 641, 644 (CCPA 1974). The obviousness rejection of claim 1 is sustained. The obviousness rejection of claims 3 and 5 is likewise sustained because appellant has chosen to let these claims stand or fall with claim 1 (Brief, page 6).

The obviousness rejection of claims 2, 4 and 6 is reversed because the admitted prior art, Fukuyama and Teranishi neither teach nor would have suggested detecting a switching signal based upon a slide member that moves with the rotation of the motor, and that has a switching device interlocked into a cam groove on the slide member.

The obviousness rejection of claims 7, 8 and 9 is reversed because the admitted prior art, Fukuyama and Teranishi neither teach nor would have suggested a mode discriminating method/apparatus that is capable of

distinguishing between 2^n operating modes by using only n-1 switching signals.

The obviousness rejection of claims 1 through 9 based upon the admitted prior art, Fukuyama, Gotoh, and Kitami is reversed because we agree with appellant's arguments (Reply Brief, pages 18 through 40 and 43 through 53).

DECISION

All of the obviousness rejections are reversed except for the obviousness rejection of claims 1, 3 and 5 based upon the admitted prior art, Fukuyama and Teranishi. Accordingly, the decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

JAMES D. THOMAS)
Administrative Patent Judge)
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JERRY SMITH	)	
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Application No. 08/319,658

APJ HAIRSTON

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DECISION: AFFIRMED-IN-PART
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s):

Prepared: December 5, 2000

Draft Final

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OB/HD GAU

PALM / ACTS 2 / BOOK
DISK (FOIA) / REPORT